

**PATENT**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

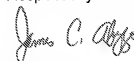
In re Application of:	:	Docket: SPG 6613 PDUS
Hongjie CAO et al.	:	
	:	Examiner: Lakshmi Sarada
Serial No.: 10/723,341	:	Channavajjala
	:	
Filing Date: November 26, 2003	:	Group Art Unit: 1611
	:	
For: USE OF ACRYLATES COPOLYMER AS	:	Confirmation Number: 8212
WATERPROOFING AGENT IN PERSONAL	:	
CARE APPLICATIONS	:	

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REPLY BRIEF ON APPEAL**

Appellant hereby submits this Reply Brief in accordance with 37 C.F.R.  
§ 41.41(a)(1), in response to the Examiner's Answer mailed December 9, 2010. The  
honorable Board is respectfully requested to reverse the rejections for the reasons set  
forth herein.

Respectfully submitted,



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**I. STATUS OF THE CLAIMS**

Claims 1, 2, 8-10 and 27-29 are currently pending, with claims 3-7 and 11-26 having been canceled. Claims 1, 2, 8-10 and 27-29 stand rejected and are appealed.

## **II. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection to be reviewed on Appeal are summarized as follows:

Whether claims 1, 2, 8-10 and 27-29 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 6,221,389 to Cannell *et al.* ("Cannell") in view of U.S. Patent No. 4,085,264 to Seib *et al.* ("Seib") and U.S. Patent No. 4,172,122 to Kubik *et al.* ("Kubik").

### **III. ARGUMENTS**

As set forth in the final Official Action dated June 10, 2010, the Office rejected claims 1, 2, 8-10 and 27-29 as unpatentable over Seib in view of Kubik, and claims 1, 2, 8-10 and 27-29 as unpatentable over Cannell in view of Seib and Kubik.

As indicated in the Examiner's Answer on pages 2 and 3, the Office has withdrawn the rejections of claims 1, 2, 8-10 and 27-29 as unpatentable over Seib in view of Kubik. Therefore, only the rejection of claims 1, 2, 8-10 and 27-29 as unpatentable over Cannell in view of Seib and Kubik remains and is addressed below.

#### **Comments on Grounds of Rejection**

In response to the Examiner's Answer mailed December 9, 2010, Appellants provide the following additional distinguishing commentary, which is believed to address the Office's comments and place the present case in condition for allowance. Reversal and withdrawal of the final rejection of all of the pending claims is respectfully requested.

**A.** In the Response to Argument Section of the Examiner's Answer, at page 9, the Office alleges that "Appellants' arguments are not persuasive because instant rejection explains that Cannell teaches acrylate terpolymers made of ethylacrylate, methacrylic acid and t-butyl acrylate for hair style holding effect and have washable properties." The Office then cites to Example 22 of Cannell as allegedly teaching a mascara composition that "employs the acrylate copolymer, which reads on an emulsion." (Examiner's Answer, page 9). The Office concludes that "the only difference between instant claimed polymer and that of Cannell is the percentages of monomers, for which the rejection relies on the teachings of Seib." (Examiner's Answer, page 9) (emphasis added).

Appellants respectfully disagree with the Office's allegations. While the Office is correct that Cannell teaches a polymer, i.e. Luvimer 100P (see col. 8, lines 23-24), which is a polymer of t-butyl acrylate/ethyl acrylate/methacrylic acid, this polymer is distinguishable from Appellants' claimed polymer. As recited in claim 1, Appellants'

acrylate copolymer emulsion requires butyl acrylate, methyl methacrylate, and methacrylic acid. Accordingly, claim 1 is distinguishable over this teaching of Cannell in that the polymer of Cannell does not include the same three monomers as required in Appellants' claim 1. Furthermore, in Example 22, to which the Office cites, the only polymer that would allegedly read on Appellants' claimed acrylate copolymer is the terpolymer, AMPHOMER LV-71, which is an octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer. As this includes a hydrophobic monomer having an alkyl group of greater than or equal to C8, i.e. octylacrylamide, the acrylate copolymer of claim 1 is distinguishable over the terpolymer of Example 22. In addition, it is well known to one of ordinary skill in the art that AMPHOMER LV-71 is sold as a white powder. Thus, contrary to the Office's assertions, nowhere in Example 22 is it disclosed or suggested that this ingredient was used or added in the form of an emulsion, as required in claim 1.

In summary, contrary to the Office's assertions, Cannell teaches a different terpolymer than in claim 1, Example 22 does not teach the same base acrylate copolymer as claimed and Example 22 does not disclose or suggest, as the Office alleges, that the terpolymer used is an emulsion – only that the personal care composition, i.e. mascara, is. Accordingly, Appellants submit that the Office's rationale for maintaining the rejections is improper.

**B.** In the Response to Arguments Section of the Examiner's Answer, at page 10, the Office alleges that "the acrylate polymer of Seib differs from the instant claimed polymer only in the percentages of butylacrylate monomers." The Office acknowledges that Seib teaches 10% to 30% butyl acrylate, whereas Appellants' claim 1 requires "about 38% to about 48%". Regardless of the significant numerical differences, the Office concludes that because the term "about" has not been defined in the instant application, the claimed range of "about 38% to about 48%" encompasses the 30% butyl acrylate monomer taught by Seib.

Appellants' respectfully disagree with the Office's conclusion. Appellants are not aware of any requirement that requires that the term "about" be expressly defined in the

application, or that the absence of such definition allows for the term to be construed without any restriction. Rather, as set forth in the M.P.E.P. § 2173.05(b)(A), "[i]n determining the range encompassed by the term 'about', one must consider the context of the term as it is used in the specification and claims of the application. *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1326, 81 USPQ2d 1427, 1432 (Fed. Cir. 2007)." Here, the lower limit of the term "about 38%" cannot "encompass" 30% as alleged by the Office. This is because the claimed range is from "about 38% to about 48%". If "about" is centered on 38% and 48% respectively, then "about" cannot be more than  $\pm 5\%$ , as the difference between 38% and 48% is 10%. Otherwise, using the Office's interpretation, "about" would be at least  $\pm 8\%$ , in which case "about 38%" would overlap with "about 48%". Accordingly, Appellants submit that "about 38%" cannot encompass 30% as the Office alleges, as such construction would be unreasonably broad and inconsistent in the context of the claim itself.

It is further noted that while the range of butyl acrylate monomer of Seib is from 10% to 30%, the preferred range of Seib disclosed at col. 2, line 24 is from 10% to 20%. Accordingly, where the lower limit of Appellants' claimed range for butyl acrylate is centered on 38% and the upper limit of Seib's disclosed alkyl acrylate is 30%, these ranges are significantly different. Furthermore, where Seib's preferred range has an upper limit even lower, i.e. 20%, which is much lower than the lower limit claimed by Appellants. Thus, Appellants submit that the teaching of Seib to one of ordinary skill in the art would have been to use lower than 30%, not higher than 30%, alkyl acrylate. Accordingly, Appellants submit that there is no teaching or suggestion in Seib that would have led one of ordinary skill in the art to include butyl acrylate in an amount reaching the level claimed by Appellant. That Appellants have not shown any unexpected advantage of the claimed range of butyl acrylate over the range of alkyl acrylate of Seib is of no consequence here, as, Appellants submit, the Office has not established a *prima facie* case of obviousness in the first instance.

Furthermore, in addition to the difference in the percentages of butyl acrylate monomers, the claimed invention also differs from Seib in that the claimed invention requires an acrylate copolymer emulsion. In contrast, Appellants submit that the

acrylate copolymer of Seib is not an acrylate copolymer emulsion. The Office acknowledges this at page 6 of the Examiner's Answer. Indeed, Seib does not appear to have recognized or suggested that by including an acrylate copolymer emulsion as an ingredient in a personal care composition, the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing.

C. In the Response to Arguments Section of the Examiner's Answer, at page 10, the Office alleges that "Kubik teaches acrylate polymers that are made of 75%-95% alkyl esters (or acrylic acid and methacrylic acid together) and 5% to 25% acrylic acid monomers (see col. 4, 13-27 & tables in col. 13-14)." The Office concludes that "[t]hus, the claimed acrylate polymers comprising acrylic acid, butacrylate [*sic*] and methyl methacrylate are known in the art and are employed in cosmetic compositions for their film-forming ability." (Examiner's Answer, page 10).

Here again, Appellants respectfully disagree with the Office. More specifically, the claimed acrylate copolymers comprise butyl acrylate, methyl methacrylate and methacrylic acid, not acrylic acid as stated by the Office. Further, at col. 4, lines 3-27, Kubik discloses preferred polymers derived from acid monomers and alkyl ester monomers. While all alkyl ester monomers may be implicitly disclosed, as a whole, Kubik would not have taught one of ordinary skill in the art to use an alkyl group of 4 (butyl). For example, Kubik discloses more preferred and most preferred embodiments in which the alkyl ester monomers have alkyl groups containing 6 to 18 carbons. See also Appellants' arguments at the paragraph bridging pages 16 and 17 of their Appeal Brief. Thus, where the claimed acrylate copolymer includes butyl acrylate, Kubik teaches alkyl groups which are distinguishable over those in Appellants' claims.

Moreover, in the tables in cols. 13 and 14 to which the Office cites, none of the polymers include the combination of monomers as required in the acrylate copolymer emulsion of Appellants' claim 1. That is, while the monomers in the table include butyl acrylate (BA), methyl methacrylate (MMA) and methacrylic acid (MAA), none of the disclosed terpolymers include all three monomers in the same copolymer. Accordingly,



it cannot be said that based on Kubik, the acrylate copolymers as recited in claim 1 are known in the art and are employed in cosmetic compositions for their film-forming ability, as the Office alleges.

D. In the Response to Arguments Section of the Examiner's Answer, at page 11, the Office alleges that "if the instant copolymer emulsion is obtained by emulsion polymerization, then Kubik not only teaches bulk and solution polymerization, but also emulsion polymerization process." The Office concludes it would have been obvious to prepare the acrylate copolymers of Seib by emulsion polymerization, so as to prepare the polymer emulsion and incorporate it into the compositions of Cannell. Further, the Office points out that the instant claims are drawn to a product and not a process of preparing the polymer. In addition, at page 12, the Office alleges that where the instant specification teaches the polymer may be employed in an emulsion or dry powder form, no advantage of the emulsion over the dry powder is shown. Thus, the Office concludes that one of ordinary skill in the art would have recognized that the acrylate polymer is capable of forming a film irrespective of the method of preparation.

Appellants respectfully disagree with these characterizations and conclusions. First, while it is true that Kubik discloses that its polymers may be prepared by any standard bulk, solution or emulsion polymerization, with the latter two being preferred, Kubik fails to disclose a polymer, such as recited in claim 1, made by these processes. Further, Appellants disagree that such teaching would have made it obvious to prepare the acrylate copolymers of Seib by emulsion polymerization and arrive at the claimed invention. As the Office has admitted previously, there appears to be nothing in Kubik to suggest that of the different forms of polymerization, one would have been more desirable than the others. Thus, based on the combination of Seib and Kubik, there appears to be no indication to one of ordinary skill in the art that the form of the polymer of Seib would even need to be modified to be used in Kubik. Accordingly, without Appellants' own specification, one of ordinary skill in the art would have had no reason to modify the form of the polymer of Seib, much less make Seib in the form of an emulsion, based on only the general teachings of Kubik.

In addition, claim 1 requires that the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing. In contrast, neither Seib nor Kubik nor Cannell appear to have recognized or suggested that by including an acrylate copolymer emulsion as an ingredient in a personal care composition, the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing. The Office appears to state, based on its citation to caselaw, that this limitation is a process limitation that does not limit the product claim. Appellants submit, however, that such limitation is a property of the acrylate copolymer emulsion and not a process step. Accordingly, such property should not be ignored.

Indeed, the acrylate copolymer emulsion as recited in claim 1 is particularly beneficial because it provides a water proofing effect to the personal care composition, and the acrylate copolymer emulsion is more readily incorporated into the water (continuous) phase of personal care compositions without the need for any additional processing. This advantage is described at page 4, beginning at line 4 of the present application. Such advantage also differentiates the emulsion form over that of a dry powder form, which requires further processing to be incorporated into the personal care composition. That the teachings of Kubik, Seib and Cannell do not recognize this difference and further that the Office even alleges that "one of ordinary skill in the art would have recognized from the teachings of Kubik and also Seib that the acrylate polymer is capable of forming a film, irrespective of the method of preparation" supports Appellants' position. That is, the lack of such teaching in the cited references and the Office's own statement about the "the method of preparation" (or more accurately the form of the acrylate copolymer) being inconsequential evidences that the claimed acrylate copolymer emulsion and the property of being readily dispersible in the personal care composition at any point during processing without the need for additional processing, is unexpected.

E. In the Response to Arguments Section of the Examiner's Answer, at page 12, the Office alleges that Appellants' previous arguments that Kubik teaches away from Seib was not persuasive because "the teachings of Kubik have been cited only to show

acrylate polymers can be prepared by several methods such as emulsion polymerization and not for incorporating the polymers of Kubik in the teachings of Seib et al or of Cannell et al." (emphasis added). The Office further states that "[t]he present rejection does not rely on the teachings of Kubik for lower alkyl esters because as explained above Seib teaches butyl acrylate and for the amounts of the esters suggests 30% (upper limit)." (Examiner's Answer, at page 12) (emphasis added).

Appellants respectfully submit that where the Office picks and chooses only portions of the references that it deems supports its rejection, to the exclusion of the rest of the references' teachings, the rejection is improper and contrary to established caselaw. More specifically, as the Federal Circuit has mandated, "[a] prior art reference must be considered in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention." (emphasis in original) M.P.E.P. § 2141.02(VI) (citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983, *cert. denied*, 469 U.S. 851 (1984)). Accordingly, where the Office has (admittedly) ignored portions of Kubik that teach away from or lead away from the claimed invention, as Appellants' argued previously in their Appeal Brief (which arguments are incorporated herein by reference), Appellants submit that the Office's rejection is improper and must be withdrawn.

F. Finally, in the Response to Arguments Section of the Examiner's Answer, at pages 12-13, the Office alleges that "[w]ith respect to the argument that the instant claimed composition does not require additional processing unlike that of Seib and Kubik, instant claims are not limited to a process of preparation and instead are directed to a product. However, the instant 'comprising' language allows for additional components and hence does not exclude additional steps."

Appellants agree that claim 1 is directed to a product and not a process. Appellants disagree, however, that claim 1 is a product-by-process claim and that the limitation "wherein the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing" should be ignored. As noted above, this limitation defines a property of the acrylate copolymer

emulsion. Indeed, this differentiates the acrylate copolymer from an acrylate copolymer in dry form, such as a powder. Accordingly, Appellants submit that it is improper for the Office to ignore this claim limitation.

Furthermore, that the claim includes the transitional phrase "comprising" indeed allows for additional components. However, as the claim is not a process claim, it is unclear as to why the Office states that such language "hence does not exclude additional steps." Claim 1 of the instant invention recites the property of the copolymer "wherein the copolymer is readily dispersible in the personal care composition at any point during processing without the need for additional processing." Where Cannell, Seib and Kubik, either alone or in their combination, fail to teach, disclose or suggest such property, Appellants submit that the claimed copolymers are distinguishable over these cited references. Appellants submit that whether additional components are included or excluded or whether additional steps are involved is irrelevant.

#### IV. CONCLUSION

For all of the above reasons, as well as all of the reasons submitted in Appellants' Appeal Brief filed November 22, 2010, Appellants submit that the currently pending rejections of claims 1, 2, 8-10 and 27-29 are improper. Accordingly, the rejection of the appealed claims of record should be reversed with instructions to allow these claims over the cited references. Such action is hereby respectfully requested.

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